

Claims

1. Method for enabling quasi peer-to-peer data connectivity in cellular communication networks, comprising:
 - 5 - receiving data from one mobile terminal which is selected out of a set of mobile terminals participating in a quasi peer-to-peer data communication;
 - retrieving information about destination mobile terminals, wherein said destination mobile terminals are mobile terminals of said set of mobile terminals with the exception of said selected mobile terminal; and
 - 10 - transmitting said received data to said destination mobile terminals in accordance with said information about said destination mobile terminals.
2. Method according to claim 1, wherein said quasi peer-to-peer data communication is associated with a relay session for handling data communication between mobile terminals of said set of mobile terminals, wherein said relay session needs to be established by an initiating mobile terminal.
 - 15 3. Method according to claim 2, wherein said establishing of said relay session comprises:
 - 20 - receiving a request for initiating said relay session from said initiating mobile terminal; wherein said request for initiation at least comprises an instruction to establish a new relay session forming said relay session; wherein said initiating mobile terminal becomes one mobile terminal out of said set of mobile terminals; and
 - transmitting a response to said initiating terminal, wherein said response comprises at least a session identifier associated with said relay session.
 - 25 4. Method according to claim 2 or claim 3, wherein each of said mobile terminals of said set of mobile terminals with the exception of said initiating terminal are joining to said relay session to participate in said quasi peer-to-peer communication.
 - 30 5. Method according to claim 4, wherein said joining to said relay session comprises:
 - receiving a request for signing-up in said relay session from a signing-up mobile terminal, wherein said request for signing-up comprises at least said session identifier; and
 - joining said signing-up mobile terminal to said relay session identified by said session identifier such that said signing-up mobile terminal becomes one mobile terminal out of said set of mobile terminals.

6. Method according to anyone of the preceding claims, wherein said mobile terminals of said set of mobile terminals authenticate before participating in said quasi peer-to-peer communication.
- 5 7. Method according to anyone of the preceding claims, wherein said mobile terminals of said set of mobile terminals communicate over data packet switched services for communicating said data.
- 10 8. Method according to anyone of the preceding claims, wherein said mobile terminals of said set of mobile terminals communicate via a protocol out of group of protocols comprising at least transmission control protocol (TCP) and user datagram protocol (UDP).
9. Method for allowing a mobile terminal for quasi peer-to-peer connectivity with at least one other mobile terminal; comprising:
 - 15 - transmitting data to be communicated to said at least one other mobile terminal by transmitting said data to a relay entity; and
 - receiving data originating from said at least one other mobile terminal by receiving said data from said relay entity.
- 20 10. Method according to claim 9, further comprising:
 - establishing a relay session on said relay entity by transmitting an indication thereto; wherein said relay session is associated with said quasi peer-to-peer data communication and handles data communication between said mobile terminal and said at least one other mobile terminal.
- 25 11. Method according to claim 10, wherein said establishing comprises:
 - transmitting a request for initiation of said relay session to said relay entity, wherein said request for initiation comprises at least an instruction to establish a new relay session forming said relay session; wherein said mobile terminal becomes participant in said quasi peer-to-peer data communication; and
 - receiving a response from said relay entity, wherein said response comprises at least a session identifier associated with said relay session.
- 30 12. Method according to claim 9, further comprising:
 - joining to said relay session on an indication transmitted to said relay entity.
- 35 13. Method according to claim 12, wherein said joining comprises:

- transmitting a request for signing-up to said relay session, wherein said request for signing-up comprises at least said session identifier; wherein said mobile terminal becomes participant in said quasi peer-to-peer data communication.

5 14. Method according anyone of the claim 9 or claim 13, further comprising:

- inviting said at least one other mobile terminal to participate in said quasi peer-to-peer data communication by transmitting a request for invitation to said at least one other mobile terminal such that said at least one other mobile terminal is enabled to join to said relay session, wherein said request for invitation comprises at least said session identifier that is associated with said relay session.

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15. Method according anyone of the claims 9 or claim 14, further comprising:

- receiving a request for invitation from said at least one other mobile terminal such that said mobile terminal is enabled to join to said relay session, wherein said request for invitation comprises at least said session identifier that is associated with said relay session.

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20 16. Method according to claim 13 or claim 15, wherein said request for invitation is communicated via a peer-to-peer communication mechanism, particularly via a peer-to-peer messaging mechanism.

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17. Method according to anyone of the claims 9 to 16, wherein said mobile terminal and/or said at least one other mobile terminal authenticate at said relay entity.

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18. Method according to anyone of the claims 9 to 17, wherein said mobile terminal and said at least one other mobile terminal communicate over data packet switched services for communicating said data.

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19. Method according to anyone of the claims 9 to 18, wherein said mobile terminal and said at least one other mobile terminal communicate via a protocol out of group of protocols comprising at least transmission control protocol (TCP) and user datagram protocol (UDP).

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20. Method for enabling quasi peer-to-peer data connectivity in a system comprising at least two mobile terminals subscribed in cellular networks and a relay entity, wherein said at least two mobile terminals are adapted for carrying out operations of anyone of the claims 9 to 19, wherein said relay entity is adapted for carrying out operations of anyone of the claims 1 to 8.

21. Computer program product for executing a method for enabling quasi peer-to-peer connectivity between at least two mobile terminals in cellular communication networks, comprising program code sections for carrying out the steps of anyone of claims 1 to 20, when said program is run on a computer, a terminal, a network device, a mobile terminal or a mobile communication enabled terminal.

5 22. Computer program product for executing a method for enabling quasi peer-to-peer connectivity between at least two mobile terminals in cellular communication networks, comprising program code sections stored on a machine-readable medium for carrying out the
10 method of anyone of claims 1 to 20, when said program product is run on a computer, a terminal, a network device, a mobile terminal, or a mobile communication enabled terminal.

15 23. Computer data signal embodied in a carrier wave and representing instructions, which when executed by a processor cause the steps of anyone of claims 1 to 20 to be carried out.

20 24. Relay entity for enabling quasi peer-to-peer connectivity between mobile terminals in cellular communication networks, comprising:

- a network interface (30) for receiving requests and data associated with a quasi peer-to-peer communication and for transmitting responses and said data associated with said quasi peer-to-peer communication;
- a protocol handler module (31) for handling requests received from said mobile terminals, wherein said requests comprises at least requests for initiating a relay session, and requests for signing-up a mobile terminal to said relay session; and
- a redirector module (33) responsible to transmit for handling said data associated with said quasi peer-to-peer communication on the basis of a relay session associated with a quasi peer-to-peer communication; wherein said data received from one mobile terminal are transmitted to all remaining ones of said mobile terminals with exception of said one mobile terminal.

25 30 25. Relay entity according to claim 23, wherein said protocol handler module (31) is further adapted for parsing said requests and configuring said relay session accordingly.

35 26. Relay entity according to claim 23 or claim 24, further comprising:

- a relay session database (32) which is adapted to store and provide information about said relay session.

27. Mobile terminal enabled for quasi peer-to-peer connectivity in a cellular communication network with at least one other mobile terminal, comprising:

- a cellular communication interface (40, 52) for transmitting requests and data to be communicated to said at least one other mobile terminal by transmitting said data to a relay entity and for receiving data originating from said at least one other mobile terminal by receiving said data from said relay entity, wherein said requests comprises at least requests for initiating a relay session, requests for signing-up a mobile terminal to said relay session, wherein said data are associated with a quasi peer-to-peer communication between said mobile terminal and said at least one other mobile terminal; and
- peer-to-peer communication module (51) mediating between said cellular communication interface (40, 52) and at least one application (45, 50) operable on said mobile terminal, wherein said peer-to-peer communication module (51) is adapted to generate and transmit requests to the said relay entity, to supply said data provided by said at least one application (45, 50) to be transmitted to said one other mobile terminal, to said cellular communication interface (40, 52); and to supply said data originating from said at least one other mobile terminal and provided by said communication interface (40, 52) to said at least one application (45, 50).

28. Mobile terminal according to claim 26, further comprising:

- a dispatcher module (41) for parsing messages received via a peer-to-peer communication mechanism to determine whether said message is a request for invitation; for supplying parsing results to said at least one application (45, 50) to enable said at least one application (45, 50) to employ said quasi peer-to-peer communication.

29. Mobile terminal according to claim 27, further comprising:

- a dispatcher database (42) for registering applications operable on said mobile terminal on the basis of application identifiers; wherein said application identifiers is employed to identify said at least one application (45, 50), which is addressed by said request for invitation.

30. System for enabling quasi peer-to-peer connectivity, comprising at least two mobile terminals subscribed in cellular networks and a relay entity, wherein each of said at least two mobile terminals corresponds to a mobile terminal according to anyone of the claims 27 to 29, wherein said relay entity corresponds to a relay entity according to anyone of the claims 24 to

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